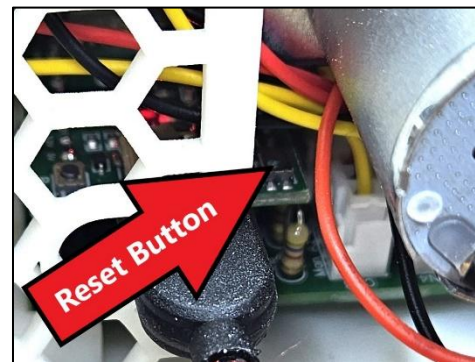


UPGRADING THE ROTOR'S FIRMWARE

Periodically, WA4MCMkits may release updates to the rotor's firmware. This could be to fix bugs or provide enhancements. Firmware updates may easily be accomplished using the existing USB-C computer interface on the rotor's microcontroller module by executing the following steps:

Caution: Unless you follow these steps exactly, there is a possibility that you may "brick" your PSR-100. Especially if you enter the wrong hexadecimal installation address. Please double-check your work before clicking the "Program" button. If you do end up bricking your rotor, please contact WA4MCMkits @ don.friend@wa4mcmkits.com for assistance.

1. Connect a USB-A to USB-C Data Cable between the PSR-100's USB-C jack and a PC with an Internet connection.
2. Please refer to the images below for the locations of the boot and reset buttons on the microcontroller module once it has been installed inside the rotor's main body:



Use a small probe or screwdriver to press and **hold** the "boot" button on the rotor's microcontroller module. While still holding down the "boot" button, use a second small probe or screwdriver to press and release the "reset" button. This will put the microcontroller module into a mode for uploading a new firmware image. It will also temporarily change the virtual serial port number being used by the rotor while in this mode.

3. Go to the following web site: https://adafruit.github.io/Adafruit_WebSerial_ESPTool/
4. Click the "Connect" button in the upper-right corner of the page, and then select the serial port that is labeled "USB JTAG/serial debug unit" and click connect. Please note that this will be a different virtual serial port than what has normally been used for your rotor.
5. Refer to the image for a sample response from the flasher tool – the MAC address you see will be different. The results text should show that you've connected successfully. Once this happens, you'll be able to set up the image file for programming.
6. Leave the top file offset to 0x0. **Note: the "0x" is already entered for you by the web page.**
7. Click the top "Choose a file..." button and navigate to and select the firmware file (**PSR-100 Firmware Merged vX.X.X.bin**) that is contained in the same .zip file as these instructions (the "X's" will vary based on the current version number).
8. Click the "Program" button and observe the progress bar until it's done.
9. Press the reset button on the rotor's microcontroller module.

```
ESP Web Flasher loaded.
Connecting...
Connected successfully.
Try hard reset.
Chip type ESP32-S3
Connected to ESP32-S3
MAC Address: C0:4E:30:0C:83:B4
Uploading stub...
Running stub...
Stub is now running...
Detecting Flash Size
FlashId: 0x1740C8
Flash Manufacturer: c8
Flash Device: 4017
Auto-detected Flash size: 8MB
```